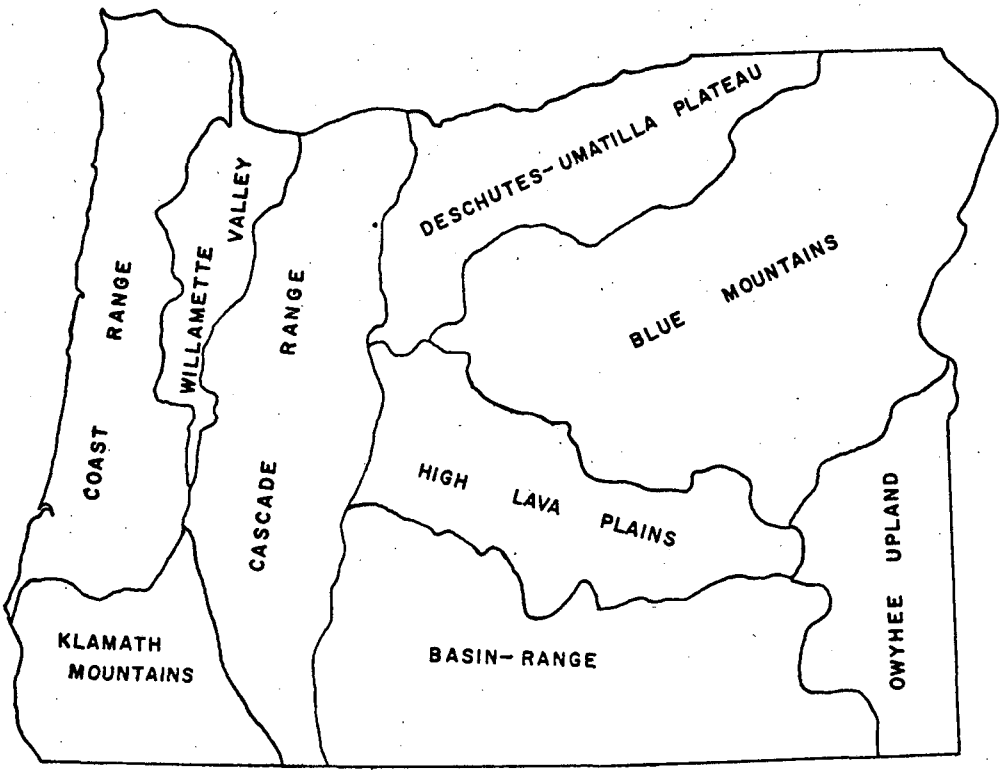


Fig. 1, Physiographic Divisions of Oregon (After Dicken, 1955).

MAJOR DIVISIONS OF GEOLOGIC TIME

ERA	PERIOD OR SYSTEM	EPOCH OR SERIES	APPROX. NO. OF MILLION YEARS AGO	APPROX. LENGTH IN MILLIONS OF YEARS
CENOZOIC	QUATERNARY	RECENT PLEISTOCENE	0-1	1
	TERTIARY	PLIOCENE	1-12	11
		MIOCENE	12-28	16
		OLIGOCENE	28-40	12
		EOCENE PALEOCENE	40-60	20
MESOZOIC	CRETACEOUS		60-130	70
	JURASSIC		130-155	25
	TRIASSIC		155-185	30
PALEOZOIC	PERMIAN		185-210	25
	PENNSYLVANIAN		210-235	25
	MISSISSIPPIAN		235-265	30
	DEVONIAN		265-320	55
	SILURIAN		320-360	40
	ORDOVICIAN		360-440	80
	CAMBRIAN		440-520	80
PROTEROZOIC	PRECAMBRIAN		520-2100	1600+

AFTER U S GEOLOGICAL SURVEY 1954

Fig. 2, Geologic Time Scale.

Geology of Oregon, Baldwin, 1959, 1964

Geology of Oregon, Baldwin, 1959

COAST RANGE

Introduction

The Coast Range of Oregon extends from the Columbia River on the north to the Klamath Mountains on the south. The approximate southern boundary lies along the Middle Fork of the Coquille River. The general crestline of the range is about 1,500 feet in elevation, although peaks rise higher and the passes are lower. Marys Peak, 4,097 feet in elevation, is the highest peak in the Coast Range. (Pl. 3, Fig. 1.)

The summit of the passes is east of the center of the range because of the more vigorous headward erosion by coastal streams. Pleistocene changes of sea level resulted in both raised coastal terraces and drowning of the present streams forming bays and long alluvial flats. The tide commonly reaches 20 miles up river.

A narrow coastal plain fringes the western edge of the Coast Range. In places this plain is interrupted by headlands of resistant rocks that extend to the shoreline. All of the principal valley mouths have been drowned by the rising sea. Extensive sand dunes are present between Coos Bay and Heceta Head, near the mouths of most rivers and from Seaside to the Columbia River. Marine terraces representing higher stands of the sea are present along many parts of the coast. The lower terraces are narrow and in places absent along the northern and central parts of the coast, but between Bandon and Port Orford at the south end, the lower terrace is commonly 4 to 6 miles wide.

The Coast Range is divided into three segments for discussion, the northern, central, and southern. The Salmon and Yamhill rivers separate the northern and central parts and the Umpqua River separates the central and southern parts.

Northern Coast Range

Siletz River Volcanic Series

The oldest formation exposed in the Coast Range is a series of submarine lava flows, breccias, and tuffs (Fig. 12) of great but unknown thickness. This volcanic series crops out east of Tillamook in the Wilson, Trask, Nehalem and Nestucca river drainage area. Warren, Norbisrath and Grivetti (1945) called this series the Tillamook volcanic series although they did not restrict the formation to volcanics of early Eocene age, and they included both early and late Eocene flows. Mapping in the Spirit Mountain (Baldwin and Roberts, 1952) and in the Sheridan and McMinnville areas (Baldwin, Brown, Gair and Pease, 1955) revealed both lower to middle Eocene volcanic rock, which included flows along upper Willamina Creek and most of the Tillamook volcanic series of Warren, *et al.*, (1945), and upper Eocene volcanic flows near Sheridan which are present in places around the edges of the older volcanic mass and which are equivalent to the Goble volcanic rocks and the Nestucca volcanic series of Snavely and Vokes (1949).

Most of the Tillamook volcanic series is equivalent to the Siltez River volcanic series, described by Snavely and Baldwin (1948). The Siletz River volcanic series lies beneath the widespread Tyee sandstone. The volcanic series will be discussed in greater detail in the discussion of the central Coast Range.

Tyee Formation

Middle Eocene sediments, which include the Tyee formation and much of the Yamhill formation, are missing in places in the northern Coast Range, and the upper Eocene volcanic rocks are

Figs. 3, 4, 5, 6 show the regions of Oregon as described in the text. Base map for these figures copyright 1941 by Erwin Raisz, used by permission.

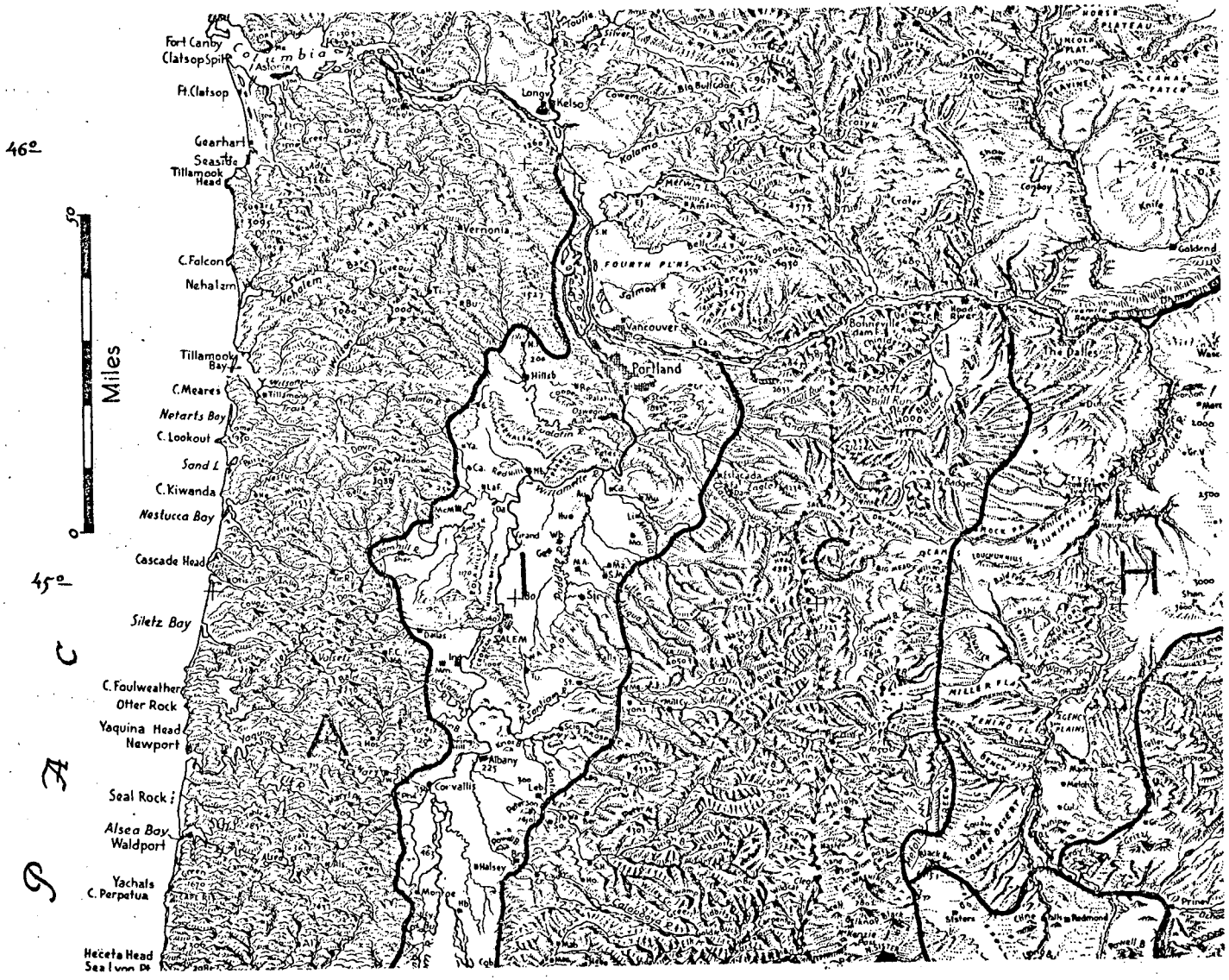


Fig. 3. Regions of northwestern Oregon. (Base map by Erwin Raisz) A. Coast Range; I. Willamette Valley; C. Cascades, east and west; H. Deschutes-Umatilla Plateau.

Oregon Geography, Dicken, 1959

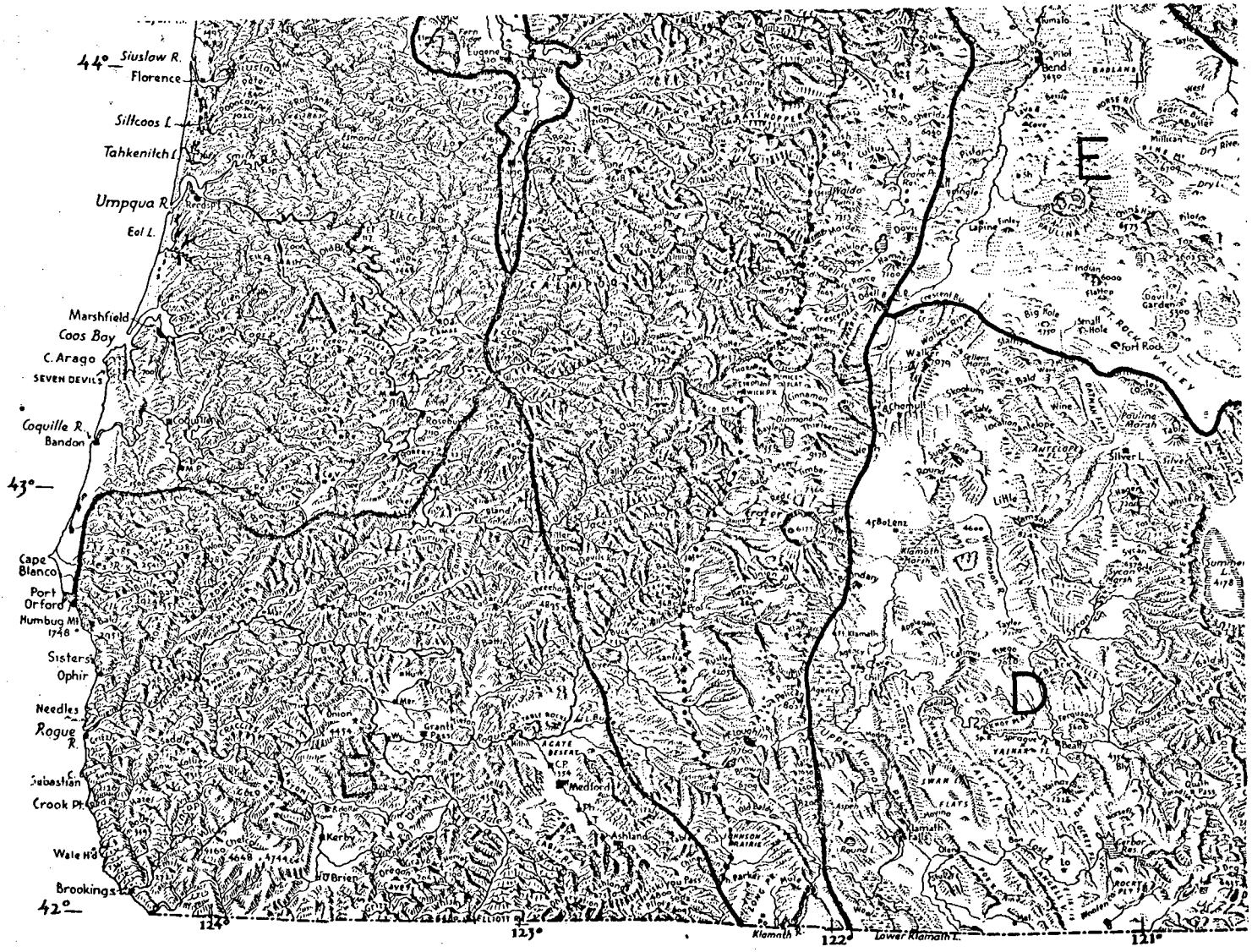
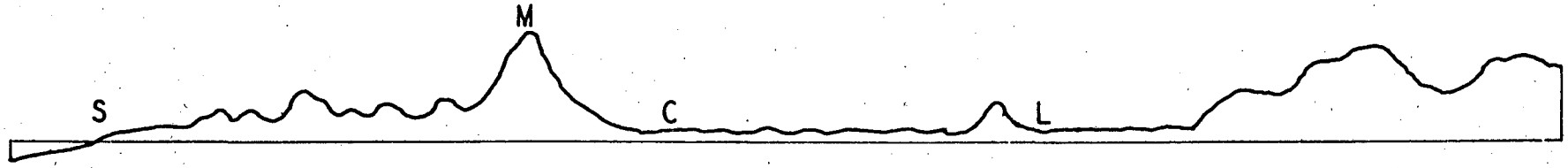


Fig. 5. Regions of southwestern Oregon. A. Coast Range; B. Klamath Mountains; C. Cascades, east and west; D. Basin-Range; E. High Lava Plains; F. (fig. 6) Owyhee Upland.

Oregon Geography, Dicken, 1959

Oregon Geography, Dicken, 1959



4. THE COAST RANGE

The rapid survey of the Coast Range from the air, as described in the previous chapter, brought out many of the more spectacular qualities of the region but did not give many details of the various landscapes. How is the geography of the Coast Range to be described in a limited space? Obviously the first step is to define and delimit the region as sharply as possible. The region may be defined, tentatively, as a rough, hilly and, in places, mountainous forest area underlain by gently dipping sediments and by more resistant igneous rocks. This is a partial definition which will become clearer as the boundaries and the character of the adjacent regions are described. The Coast Range reaches from the Columbia River to the Coquille River (approximately) and from the ocean to the floor of the Willamette Valley (figs. 3, 5). In length it is slightly more than 200 miles and the width varies from 30 to 65 miles. The range is broadest at the ends, narrow in the middle. The eastern boundary of the Coast Range passes near Rainier on the Columbia, Scappoose, Forest Grove, McMinnville, Sheridan, Dallas, Corvallis, Eugene, Cottage Grove, and Glide. This boundary line separates the rough, hilly and mountainous country of the Coast Range from the alluvial valleys and low hills of the Willamette Valley. The southern boundary, separating the older Klamath Mountains from the Coast Range extends south-westward from Glide to Myrtle Creek, and then south of the Coquille River to Myrtle Point, thence through Langlois to Port Orford. This is a simplified and somewhat arbitrary boundary. The contrasting character of the Coast Range and the Klamath Mountains was recognized by Diller (3), although he did not have enough detailed field information to draw more than a generalized boundary.

The geographic content of a description of the Coast Range can be presented by small sample studies of various parts of the region, Astoria, Alsea, and Coos Bay. In each case only a few square miles is included so that specific and detailed descriptions can be given.

Key to Profile: Coast Range, Willamette Valley and a part of the Cascades. S, Seal Rock; M, Marys Peak; C, Corvallis; L. Lebanon. See page 10.

The Astoria Area

The Astoria Area, located at the northwest corner of Oregon where the mighty Columbia meets the sea, is by no means typical of the Coast Range but it belongs to this region. In a limited sense the whole of the lower and middle portion of the great river are in Astoria's hinterland. The immediate area (fig. 7) extends from the John Day River a few miles east of Astoria to Clatsop Spit and from the vicinity of Seaside and Gearhart northward to and including the estuary of the Columbia.

The Columbia River dominates the area, bringing in people, goods, and also sediment. Although the river is often rather clear in its middle and upper courses, it carries a large load of sediment to the sea at flood stage. Much of